

Counterair and Counterland Concepts for the 21st Century

By ELLWOOD P. HINMAN IV

New conditions require, for solution—and new weapons require, for maximum application—new and imaginative methods. Wars are never won in the past.

—General Douglas A. MacArthur



Airborne target surveillance supervisor on E-8C JSTARS communicates with Army ground units during mission in February 2006

The strategic landscape of the 21st century has driven the Department of Defense (DOD) to transform the U.S. military, which requires a shift from legacy technologies and Cold War organizations to more flexible, adaptable capabilities and constructs effective across the spectrum of conflict. Each of the Services has embarked on aggressive plans that feature many technologies accompanied by new organizational constructs. The U.S. Army, for example, has shifted to modular forces based on the brigade combat team (BCT) and new technologies such as the Stryker fighting vehicle and those incorporated in the Future Combat System.

The same transformation must take place in the area of ideas. As Robert Scales argued, “More than ever war is a thinking game. Wars today must be fought with intellect as well as technology.”¹ Most operational concepts for prosecuting warfare within the changed strategic context remain wedded to legacy ideas developed decades ago. Innovative thought must bridge the ongoing changes within the separate branches and integrate the developing Service-specific technological capabilities into a seamless whole. More specifically, the need exists for a coherent set of ideas that fully integrates 21st-century American airpower with the Army brigade combat team.

Much ink has been spilled on international terrorism and irregular war. In fact, the 2006 *Quadrennial Defense Review Report* explained the transformation as a shift of emphasis “from major conventional combat operations—to multiple irregular, asymmetric operations.”² America must meet the challenges of the war on terror with continued intellectual effort in this area. However, as Air Force Lieutenant General David Deptula argued, “It’s not enough to fight today’s war against today’s enemy. We must be prepared for tomorrow.”³ Irregular war is certainly a likely form of war in

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the future, but contrary to the teachings of some contemporary thinkers, it is by no means *the* future of war. The American defense establishment also needs novel concepts for “regular war” in an era of increasingly modern technology. Conventional war against an enemy with a credible land and air force is equally important and likely in the future. A wholesale shift toward irregular war could have dangerous implications for the Armed Forces and their ability to conduct future major combat operations.

In the last century, the threat of war with the Soviet Union in Central Europe led to a similar military transformation after the U.S. debacle in Vietnam. This effort culminated with the development of a combined arms concept for fighting in the Fulda Gap labeled *AirLand Battle*. This doctrine comprised the last comprehensive U.S. military strategy that specifically addressed how air and ground forces would fight a major conventional war. The Soviet Union no longer exists, and the Fulda Gap is little more than a geographic feature within a unified Germany. The latter decades of the 20th century featured *AirLand Battle* as the U.S. military’s focus; no such coherent approach exists in the new century. But the time has come for fresh concepts integrating interdependent air and ground forces on the battlefields of the 21st century. Such is the purpose of *AirLandBattle21*.

The intent of this article is to isolate and analyze the interaction between the Army and Air Force in the context of medium- to large-scale conventional war. While certainly relevant to 21st-century conflict, this study does not discuss space and information operations in an explicit manner. Focused squarely on these two Services, *AirLandBattle21* will not specifically

with conflict in the changed strategic environment of the 21st century.

Brigade Combat Teams

The Army’s effort toward transformation aims to develop a lighter and more agile force that remains potent across the spectrum of conflict. This shift to modular forces is central to DOD transformation. During 2006 congressional testimony, General Peter Schoomaker, then-Army Chief of Staff, explained that his Service was “transforming to become a more powerful, more flexible, and more deployable force.”⁴ While the 20th-century Army deployed entire divisions in the event of war, the brigade has become the new baseline combat fighting force. Instead of the months it took to move bulky Cold War divisions, the deployment of fully combat-capable new BCTs will be measured in days. Ultimately, the Army will field 70 BCTs.⁵ Nineteen will be heavy-armor brigades, 44 will be light-infantry units, and the remaining 7 medium brigades will bridge the gap with the new Stryker fighting vehicle. Featuring both the Stryker and BCT construct, the Stryker brigade is the consummate example of new technology and new organizations ripe for new ideas to complete the transformation.⁶

The Army’s emerging concept for BCT operational maneuver is a nonlinear battlefield with autonomous BCTs conducting distributed operations in a noncontiguous and geographically separated fashion. A basic assumption in this study is that, during medium- to large-scale military operations, the Army will employ a relevant number of BCTs in this manner. Figure 1 provides a simplified depiction of a shift from the linear battlefield of the past to a 360-degree environment in the future.

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address the Navy or Marine Corps in any substantive way. Finally, *AirLandBattle21* will not offer a panacea or a “one-size-fits-all” approach to future wars. It is unlikely that every idea herein would perfectly fit any particular future operation. Future planners, however, may find the menu of options appetizing. Armed with only general ideas from joint doctrine and the dated concepts of the last century, these planners would otherwise feel compelled to start from scratch. Instead, this article offers an initial conceptual framework far more compatible

The Army fought with BCTs in both Iraq and Afghanistan. Schoomaker stated in 2006 that “for the last five years . . . the Army has had as many as 18–20 brigade combat teams deployed on a rotational basis in combat operations.”⁷ Furthermore, BCTs in Operation *Iraqi Freedom* fought in accordance with the distributed operations model. Williamson Murray and Robert Scales wrote that during initial combat operations in Iraq, each BCT “was essentially a self-contained close combat unit which, thanks to the speed and killing power

of Bradleys and Abrams tanks, had the ability to command as much ground as an entire division during the Cold War.”⁸

As a result of such employment, BCTs have become increasingly dependent on airpower. Noncontiguous BCTs will be far smaller in size than their divisional predecessors and will generally have less armor in each unit. Furthermore, the Army transformation called for a 20 percent overall reduction in artillery and multiple launch rocket systems and cut heavy artillery by as much as 60 percent.⁹ Each of these changes underscores the greatly increased interdependence between air and ground forces in the future battlespace.

In 2001, Murray found that “the problem of integrating new technologies into doctrine and structures that can realistically address the wars of the 21st century will remain as difficult as they were in the last century. But as the Army leadership has grasped, the Army has no choice but to transform.”¹⁰ With this observation, he highlighted the indelible link between technology, organization, and innovative thought, acknowledging the mandate for change in each of these areas.

Counterair Concepts

To enable BCT success, the air component must achieve a requisite level of control. The idea of air superiority is inextricably linked to American airpower, growing up with U.S. aviation as it was becoming a viable military weapon. The concept of air supremacy gained popularity as the Air Force became predominant later in the 20th century. In a large Air Force with plentiful fighter wings and a plethora of fighter aircraft, unrivaled control of the air may be possible. Current fiscal realities and resource limitations, however, bring ideas such as air supremacy into sharper focus. Budgetary constraints, the skyrocketing costs of new equipment, and the need to recapitalize an aging fleet have left the Air Force little choice but to reduce the number of aircraft and personnel.

Current estimates indicate that the Air Force will retire as many as 350 fighter aircraft in the near future. In their place will be roughly half the number of F-22s. Over 16 years of sustained air operations in Southwest Asia have stretched expeditionary elements of the Air Force. Currently, the Service is fully engaged in Afghanistan, Iraq, and the wider war on terror. The 21st-century strategic landscape features numerous additional potential threats. Mean-

while, the Army is transforming how it plans to fight in this new environment. In the aggregate, these many changes invite new ways of looking at counterair operations.

Joint Publication (JP) 1-02, DOD *Dictionary of Military and Associated Terms*, defines *air superiority* as "that degree of dominance in the air battle of one force over another that permits the conduct of operations by the former and its related land, sea and air forces at a given time and place without prohibitive interference by the opposing force."¹¹ *Air supremacy*, on the other hand, is defined as "that degree of air superiority wherein the opposing air force is incapable of effective interference."¹² As warfare becomes more interdependent, analysis of what constitutes prohibitive interference from an Army perspective may be instructive. Interestingly, in a 2006 survey of field-grade Army officers, 100 percent responded that the death of one Soldier as the direct result of enemy air attack would not constitute prohibitive interference. Over 77 percent found the loss of up to 10 Soldiers to air attack permissible under most circumstances. While Army officers may be willing to accept a number of casualties, the Air Force has not allowed the loss of a single Soldier to enemy air attack in over 50 years. Therefore, when viewed from the BCT perspective, it is reasonable to consider the regrettable future loss of a few Soldiers and a few

aircraft to enemy air attack acceptable under the umbrella of air superiority.

JP 1-02 defines *counterair* as "a mission that integrates offensive and defensive operations to attain and maintain a desired degree of air superiority."¹³ Significantly, this definition links the counterair mission to a desired degree of air superiority, implying the existence of a spectrum of control in the air. Such a conceptualization might have enduring doctrinal utility and would also lay a useful foundation for the associated development of AirLandBattle21 counterair concepts. Unfortunately, Air Force doctrine does not currently establish such a spectrum.

Figure 2 offers a novel method of viewing differing degrees of counterair along a linear continuum. The enemy's ability to interfere with friendly air and ground operations is greatest on the far left. There is no enemy interference on the far right. Friendly control of the air is the reciprocal of enemy interference, with hypothetically no control on the left of the spectrum and maximum control on the far right. Reading from left to right, *local air superiority* offers the lowest defined level of relative friendly control in the air, implying a relatively higher level of potential enemy interference. The term *local* as it relates to air superiority in this context implies the achievement of air superiority in a specific area or for a limited time. Local air superiority, then, would allow no prohibitive interference in

a particular area but, as compared to the other levels, would provide the least control across the theater as a whole.¹⁴ *General air superiority* constitutes the next level in the spectrum of relative air control. The term *general* in this context connotes constant air superiority across the entire battlespace without any temporal restrictions unless otherwise specified. For example, an air strategy might call for general air superiority throughout the theater, with the exception of a particular area that, for some

current fiscal realities and resource limitations bring ideas such as air supremacy into sharper focus

reason, will only require local air superiority during a specified time.

The next increased level of control would allow for *local air supremacy* in a specified location while maintaining general air superiority across the entire theater. As the definitions of air superiority and air supremacy suggest, this construct would allow no prohibitive interference throughout the theater and no effective interference in the particular area assigned local air supremacy. The spectrum of control in the air, featuring this concept of *general air superiority with local air supremacy*, provides a framework for the efficient use of limited air assets,

Figure 1. Noncontiguous BCT Employment

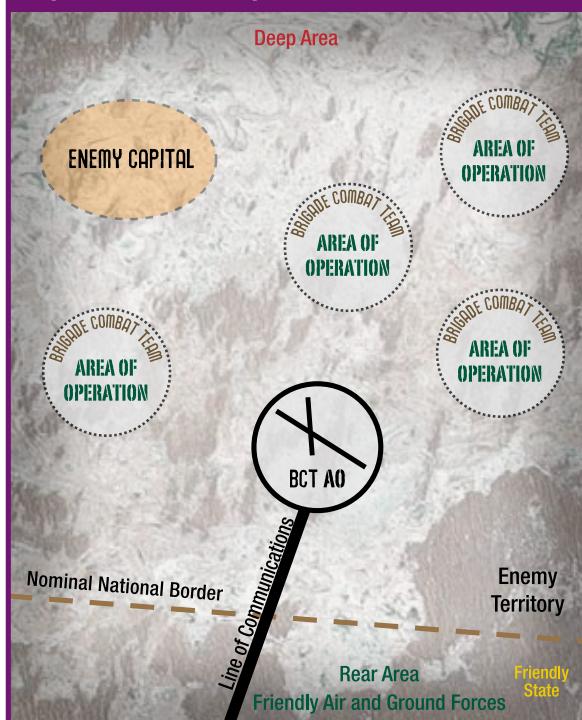
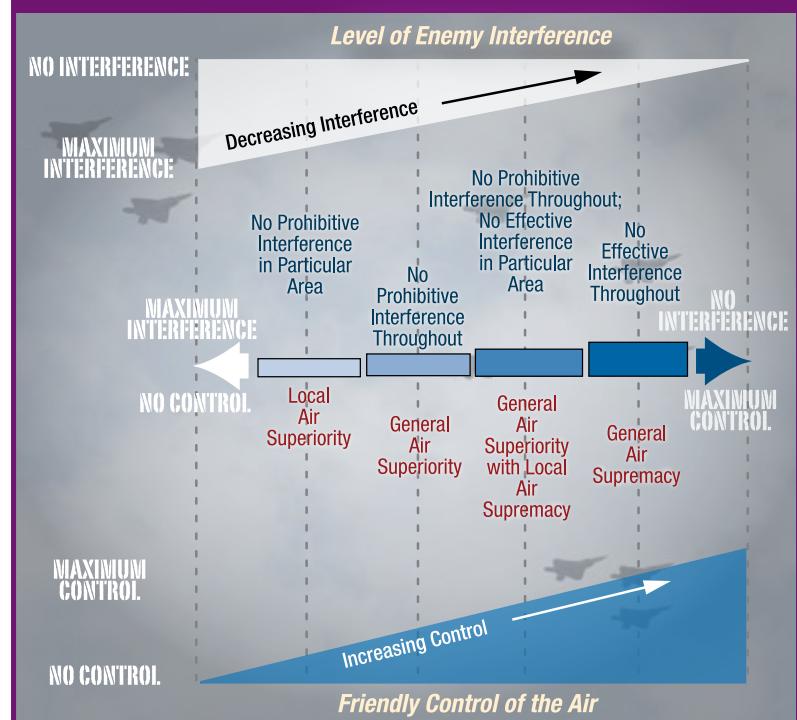


Figure 2. Spectrum for Relative Control of the Air



allowing air strategists maximum flexibility to plan for only the necessary levels of air control in different areas across the theater. Naturally, the next level of control, allowing no effective enemy interference throughout the entire battlespace, would be *general air supremacy*. While this is a fully legitimate goal in some circumstances, air planners too often aim to achieve this extremely high level of air control before it becomes necessary, diverting air assets that may be more effectively used elsewhere.¹⁵

Building on figure 1, figure 3 shows a scenario featuring local air superiority in particular areas. This lowest level of air control suggests a situation where air superiority is appropriate or necessary only over friendly territory and in two particular BCT areas of operation. There may be some compatibility with this concept and joint doctrine Phase 0 (Shape) operations that might feature the deployment of these two BCTs to perhaps establish aerial ports of debarkation and prepare for follow-on operations. The additional three areas of operation that may be activated during Phase I (Deter) operations would likely require local air superiority as well as BCTs moved into those locations.

The next level of control in the air would be general air superiority (figure 4). While such an approach would ensure no prohibitive enemy air interference across

the entire theater of combat operations, there may in some circumstances be particular areas that do not initially require this increased level of effort at all times. As figure 4 suggests, examples might include the deep area or a heavily defended enemy capital where constant air superiority would at times be inefficient and unnecessary, particularly in a situation where the bulk of air assets are attacking military targets more directly relevant to friendly surface forces. In such a scenario, local air superiority in a temporal

the spectrum of control in the air provides a framework for the efficient use of limited air assets

sense would be planned when required to enable airstrikes into these areas. While there are multiple variations to this concept, an air strategy along these lines might be compatible in certain situations with joint doctrine Phase II (Seize the Initiative) operations. In fact, as responses to the survey of Army field-grade officers suggested, general air superiority may be the highest level of control required throughout certain military operations where enabling and accelerating inte-

grated air and ground mission success are the primary purpose of the counterair effort.

In the event that conditions require it, however, the next level of air control, as depicted in figure 5, might feature general air superiority with local air supremacy. Once hostilities begin, examples of areas where commanders would likely expect no effective interference include the rear area and the battlespace over BCT areas of operation. In this increased level of control, it may be appropriate to expand general air superiority to areas not formerly offered constant control, such as the deep area and enemy capital. The scenario depicted in figure 5 would provide one possible air strategy during Phase III (Dominate) operations. This approach, featuring general air superiority, local air supremacy, and local air superiority simultaneously, suggests that as the Army moves to nonlinear operations it may be appropriate for the Air Force to do something similar. Once again, the construct featuring general air superiority with local air supremacy may be sufficient to address all requirements throughout the remainder of the operation. However, it is conceivable, and in some cases likely, that Phase IV (Stabilize) and Phase V (Enable Civil Authority) efforts would require general air supremacy.

From the interwar period to the end of the 20th century, airpower theory and doctrine

Figure 3. Local Air Superiority

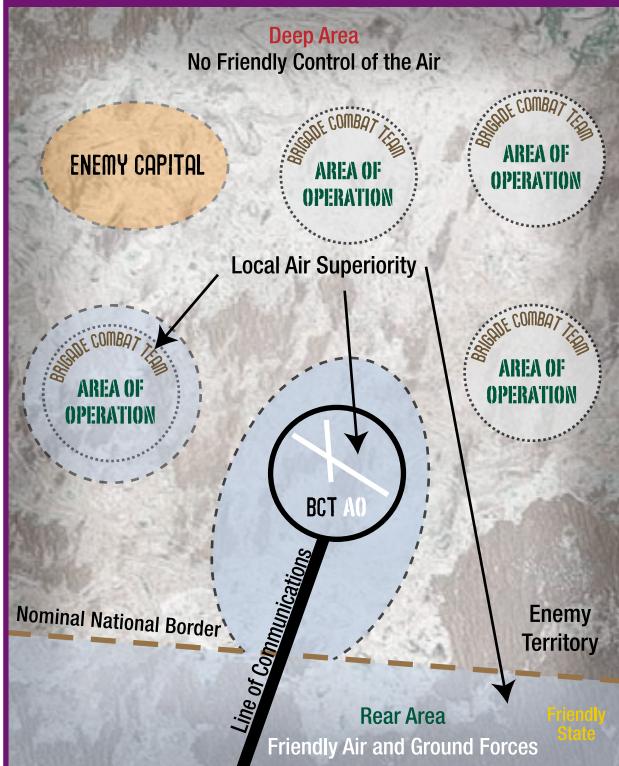
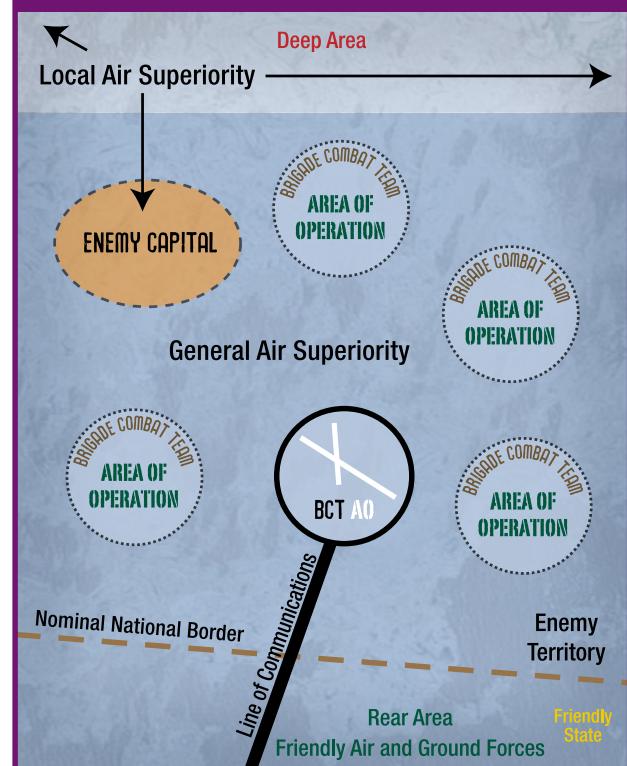


Figure 4. General Air Superiority



placed paramount emphasis on the primacy of the counterair mission. Rather than a requisite means to an end, control of the air at times became an end in itself. Transformational change within individual Services, such as the transition to BCTs and to fewer, newer aircraft, necessitates equitable change to this legacy approach. While airpower advocates promoted the highest levels of air superiority and air supremacy in the past, their Army counterparts now counsel a new paradigm. Simply stated, general air supremacy may be both less likely and less appropriate in the 21st century. Future planners using AirLandBattle21 counterair concepts will instead have a scalable menu of choices not unlike the Army's new modular construct. In order to fight with increasingly interdependent BCTs, Airmen must use their limited assets wisely. Efficiency proved a worthy Air Force guide in the last century. It will become a necessity in the future.

Counterland Concepts

In Air Force doctrine, the term *counterland* encompasses two specific missions: close air support (CAS) and air interdiction (AI). JP 1-02 defines CAS as "air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission

with the fire and movement of those forces."¹⁶ JP 1-02 defines AI as "air operations conducted to divert, disrupt, delay, or destroy the enemy's military potential before it can be brought to bear effectively against friendly forces, or to otherwise achieve objectives." It further specifies that AI "is conducted at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required."¹⁷ In simple terms, AI refers to any attacks on the enemy's military potential that do not qualify as CAS.

Many Soldiers equate the Air Force with CAS. While important in the 20th century, Service interdependence will make CAS critical in the future. According to a 2006 Air Force document, "Due to a decrease in organic artillery firepower and anticipated operations conducted by small units on a more dispersed nonlinear battlefield, the Army has stated a requirement for increased [Air Force] CAS support."¹⁸ Army transformation, paired with vastly improved airpower capabilities, suggests that 20th-century CAS concepts may be ripe for change as well. A more holistic look at the counterland mission could yield new airpower concepts more harmonious with the nonlinear nature of future ground battle.

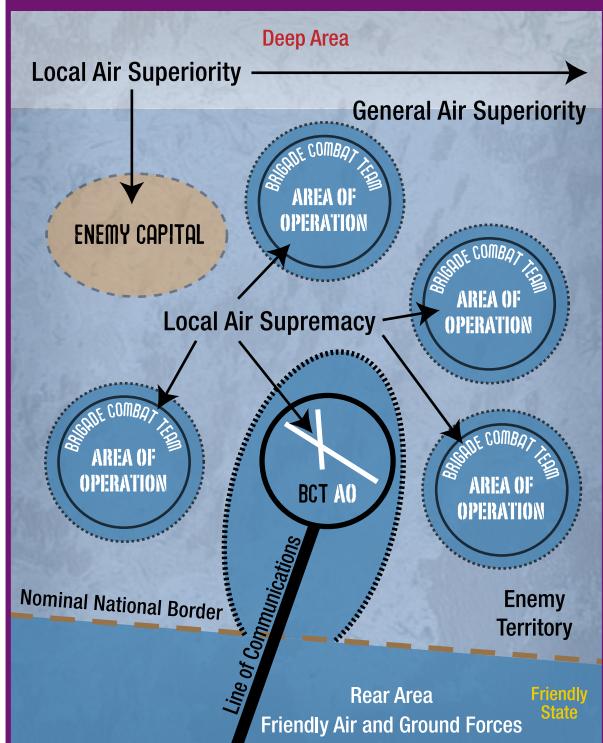
In fact, a concept beyond the traditional ground attack missions of CAS, AI, and

Soldiers test Future Combat System Class I unmanned aerial vehicle



U.S. Army

Figure 5. General Air Superiority with Local Air Supremacy



F-22A Raptor fires AIM-120 advanced medium-range air-to-air missile at aerial target drone over Gulf of Mexico



U.S. Air Force (Michael Ammons)

strategic attack may be necessary. CAS features aircraft exclusively in direct support of ground maneuver. One could envision future counterland missions with airpower in a supported role. Similarly, strategic attack favors the use of airpower independent of ground forces while a visionary mission would allow for the interdependent application of air and ground forces. In the 20th century, many Soldiers viewed airpower strictly as support to ground forces. Airmen often tended to favor the application of airpower independent of the ground fight. These two traditional views of airpower led to CAS and strategic attack receiving the bulk of emphasis from a ground attack perspective, leaving a large gap in between.

At first glance, it would appear that the traditional AI mission addressed this void. On the contrary; the term *interdict* implies the use of firepower to cut off rather than destroy, referring more to attacks on enemy lines of supply and communication than on enemy forces themselves. In a functional sense, then, AI falls short of fully embracing the enemy's fielded forces as the primary target. Geographically, it broadly encompasses a remarkably wide area that ranges from just beyond the close battle to the far reaches of the entire battlespace. By specifically acknowledging the existence of strategic attack and clearly defining the term, the Air Force has addressed one end of this spectrum. The other end warrants similar attention.

AirLand Battle of the Cold War era featured a vital airpower mission called

battlefield air interdiction (BAI). This mission was central to the doctrine's basic tenet of attacking second-echelon Soviet follow-on forces in the Fulda Gap before they closed with friendly forces. As the Berlin Wall came down, AirLand Battle fell away and this mission disappeared. In an effort to address the resulting gap, AirLandBattle21 advocates the advent of a new airpower mission labeled *battlespace air operations* (BAO).¹⁹

One pragmatic approach used largely as a result of this past void has been the practice of assigning aircraft to particular grids on the ground, called *kill boxes*. Accordingly, some may argue that the kill box has replaced the BAI mission. More accurately, though, the kill box concept is, at its core, a fire support coor-

Confusing the issue is the seemingly conspicuous incompatibility of the 20th-century fire support coordination line (FSCL) with 21st-century nonlinear BCT operations. Disagreements between the Services on where the FSCL should be drawn have further complicated the counterland mission. Thus, AirLandBattle21 advocates use of the term *battlespace coordination area* (BCA) to denote a transformational concept beyond the dated and contentious FSCL.²²

A traditional view of the battlefield features an FSCL that may be aligned with territorial zones of operation but well beyond the areas where associated BCTs actually plan to operate in the near future. Such an FSCL would likely extend past the range of

general air supremacy may be both less likely and less appropriate in the 21st century

dination measure without a doctrinal mission and without the associated widely accepted operational concepts to perform that mission.²⁰ To address the mission shortfall, planners in Korea developed an ad hoc remedy they called *mobile interdiction*, typically used to describe the task performed in a kill box assigned in the air tasking order. However, mobile interdiction is not used widely elsewhere, does not appear in either Air Force or joint doctrine, and, once again, is not accompanied by well-developed operational concepts.²¹

indigenous BCT firepower. Furthermore, applying the same traditional mindset used during *Desert Storm* and *Iraqi Freedom*, CAS would span the entire area within, around, and between the BCT areas of operation. The bulk of this battlespace would host no hostile action between enemy and friendly ground troops in close proximity. Nonetheless, as in the two Iraq wars, detailed integration would presumably be required to avoid friendly fire incidents from the air despite the absence of friendly surface forces in much of the "gray area" between BCT areas of operation. Consequently, the procedural actions required by doctrine would superimpose substantial inefficiencies unnecessary in such a situation. In practical terms, such extraneous procedures could drastically reduce the number of military targets such as enemy tanks that friendly combat aircraft could destroy, given time and fuel constraints. Simply stated, the gray area would become a sanctuary for the adversary's fielded forces.²³

A transformational view of the battlespace would also feature areas of CAS. These areas, however, would be carefully planned to encompass only those regions where troops could be reasonably expected to be in contact and where positive control measures would therefore be necessary and appropriate. In such a construct, the FSCL from the days of the linear battlefield would be replaced with BCAs far more compatible with the nonlinear battlespace of the 21st century. Instead of CAS and the baggage that it brings to this battlespace,



U.S. Air Force forward air controllers coordinate close air support from rooftop of Karbala provincial compound

U.S. Army (Sean A. Foley)

the transformational view would allow air forces in these gray areas to perform the far more appropriate mission of BAO. These actions would greatly increase the opportunity for mass destruction of military targets from the air. Rather than sanctuaries, gray areas would become killing fields.

AirLandBattle21 fills the airpower mission void with battlespace air operations and replaces the fire support coordination line with the battlespace coordination area. The lack of well-developed joint doctrine, transformational ideas, and widely accepted inter-Service operational concepts for integrating airpower and BCTs would be met with the concept of *air as a maneuver force* (AMF). The term *maneuver* implies a supported force, serving as the main effort, with other elements in a supporting role. When air and ground forces fought together in the last century, ground units played the maneuver force with airpower exclusively in support. The innovative AMF concept, however, allows air forces to serve in the maneuver role.

Because BCTs are smaller and lighter than legacy armored divisions, future U.S. ground forces may find themselves facing numerically superior and possibly heavier enemy forces. The innovative application of airpower will be central to success in this new environment. For example, the joint force commander may choose to employ an AMF as the main effort with the BCT initially supporting as a feint or fixing force. In response to the threat or perhaps opportunity posed by the BCT, the enemy may establish hasty defensive positions or may attempt to attack. In so doing, these previously "dug in" forces would be vulnerable to a strike from the air. In such a scenario, the BCT would not initially give battle, allowing airpower to attack. When appropriate, a dynamic supported/supporting relationship between these forces would allow for a timely shift in roles, placing airpower in the supporting role once the BCT strikes.

Critics may argue that the AMF concept has existed for some time and is incorporated in both Air Force and Army doctrine. While not yet accepted in the joint environment, the idea is emerging in Service documents. Applying concepts, however, can be far more difficult than developing them. The real challenge with a concept as transformational as the AMF is moving from theory to practice and truly implementing it in the battlespace in a deliberate manner. AirLandBattle21's practical,

coherent architecture will enable the widespread application of such ideas.

To fully integrate interdependent air and ground forces, transformational counter-air and counterland concepts such as those presented in this article must be accepted and implemented across the Air Force and Army. On the road ahead, the Services must also address the increased dependence a geographically separated brigade combat team will have on resupply from the air. Rather than current inter-Service focus on a particular airframe such as the joint cargo aircraft, a more complete solution will arguably reach beyond technology to a holistic ground sustainment system incorporating a variety of visionary capabilities and transformational concepts. In addition to addressing this critical airlift challenge, the 21st-century Air Force must explore alternatives to strategic attack and reconsider the 20th-century conventions that relegate the increasingly critical counterland mission to a distant third behind counterair and strategic attack.

Critics of AirLandBattle21 might argue these new concepts are too prescriptive. By no means intended as a joint planning checklist, these ideas are meant rather to simply inform future strategists. AirLandBattle21 could be viewed as an alternative framework replete with novel ideas potentially applicable to future military operations. Of course, the real world future scenario may be different than the assumptions that formed the baseline for these concepts. Guidance from the joint force commander and component commanders will drive the planning effort, but these concepts may assist staffs in meeting their intent. The goal would be for AirLandBattle21 concepts to serve as a worthwhile reference and inspire innovative future thought, but ultimately to return to the shelf as the real plans for actual contingencies take form. **JFQ**

NOTES

¹ Robert H. Scales, "The Second Learning Revolution," in *Rethinking the Principles of War*, ed. Anthony D. McIvor (Annapolis: Naval Institute Press, 2005), 43.

² Department of Defense (DOD), *Quadrennial Defense Review Report* (Washington, DC: DOD, February 6, 2006), iv.

³ David A. Deptula, "Letter to the Editor: Meeting Air Force's Needs, Today and Tomorrow," *The New York Times*, February 10, 2007, A14.

⁴ Peter J. Schoomaker, Statement Before the Committee on Armed Services, U.S. House of Representatives, 109th Cong., 2^d sess., June 27, 2006, 4.

⁵ The Active force will have 42 brigade combat teams with the additional 28 in the Guard and Reserves.

⁶ Combined Arms Center, Current Force Integration Directorate, "Modular Force Update," November 2, 2006. The next step in the Army's transformation, called the Objective Force, will integrate the Future Combat System into these brigades.

⁷ Schoomaker, 2.

⁸ Williamson Murray and Robert H. Scales, *The Iraq War: A Military History* (London: Belknap Press, 2003), 97.

⁹ Headquarters Air Force Doctrine Center (AFDC), *Army Transformation and the Impact on the Air Force*, Doctrine Watch (Maxwell Air Force Base, AL: AFDC, March 2006), 1.

¹⁰ Williamson Murray, ed., *Army Transformation: A View from the U.S. Army War College* (Carlisle, PA: Strategic Studies Institute, 2001), 9.

¹¹ Joint Publication (JP) 1-02, *DOD Dictionary of Military and Associated Terms* (Norfolk, VA: U.S. Joint Forces Command, April 12, 2001).

¹² Ibid.

¹³ Ibid.

¹⁴ Headquarters AFDC, Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine* (Maxwell Air Force Base, AL: AFDC, November 17, 2003), 77.

¹⁵ Headquarters AFDC, AFDD 2-1.3, *Counterland Operations* (Maxwell Air Force Base, AL: AFDC, September 11, 2006), 11-12.

¹⁶ JP 1-02.

¹⁷ Ibid.

¹⁸ Headquarters AFDC, *Army Transformation*, 2.

¹⁹ Terrance J. McCaffrey III, "What Happened to BAI? Army and Air Force Battlefield Doctrine Development from Pre-Desert Storm to 2001" (Thesis, School of Advanced Airpower Studies, 2002), 102.

²⁰ U.S. Army, Field Manual 3-09.34, *Kill Box: Multi-Service Tactics, Techniques, and Procedures for Kill Box Employment* (Washington, DC: U.S. Army Publishing Agency, June 13, 2005), i, I-4.

²¹ Headquarters AFDC, AFDD 2-1.3, 7.

²² Rebecca Grant, "Marine Air in the Mainstream," *Air Force Magazine* 87, no. 6 (June 2004), available at <www.afa.org/magazine/june2004/0604marine.html>.

²³ The fire support coordination line (FSCL) does not necessarily always serve as a demarcation between close air support (CAS) and other airpower missions. The traditional view, however, has generally held that CAS is the predominant aerial mission flown short of the FSCL.